The present situation and risks of home deliveries.

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I. Introduction

The Dutch obstetrical care system is strongly different from other systems in the industrilized countries in several aspects. The main differences are the selection system, the home confinements and the presence of the so called maternity helpers. Obstetrics in Holland is not the privelege of physicians only. Obstetrically well trained people (midwifes as well as mid-men) can also independently take care of selected group of patients who will deliver at home or clinically.
Selection of the potentially normal group of patients during the prenatal care is the most important base of the system. In case of pathology the pregnant woman is referred to the obstetrician in the hospital. This selection is done by the midwife and/or general practitioner by means of a list of so called medical indications for hospital deliveries. However it is not obliged to use this list. Home confinements are in general not considered as abnormal behaviour as is the case in many other countries. During the puerperium (7-10 days) a specially trained maternity helper assists the mother in the nursing procedures and is required to act as cook and do the laundry for mother and her baby. The maternity helpers are trained and send out by private organisations. This concept of trained domestic maternity helpers began already in the first decade of this century.

II. Changes

This rather unique situation changes steadily especially the last 15 years. The main changes are :

1. The number of deliveries decreased from 21,1 in 1960 till 11,0 per thousand in 1980.
2. The percentage of home deliveries decreased from 72% in 1952 to below 40% in 1980. The number of clinical deliveries increases with 2% annually the last years.
3. The net result of these developments is a complete change of the distribution of the deliveries between the professional workers. The mean number of deliveries performed by a general practitioner decreased from 26 in 1961 to 12 annually in 1973. The total percentage of the deliveries performed by the midwifes stays approximately the same, but the mean number of deliveries performed by the midwife annually decreases due to the decrease in birth rate.

III. Causes of the changes

A number of factors are responsible for these changes (6,7).

1. Social changes : these will not be discussed here.
2. Medical technical developments : the diagnostic possibilities in obstetrics increased importantly the last ten years. In consequence the obstetrical result is nowadays more related to perinatal morbidity compared to perinatal mortality.

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3. Changes concerning the professional workers : the obstetrical training for general practitioners has steadily reached an absolute minimum. The internship lasts maximal three weeks which is too short to become even familiar with normal obstetrics. Moreover they became uncertain due to the new diagnostic and therapeutic tools. They want also more fixed working hours. These factors caused that most of the general practitioners skipped the obstetrical care out of their tasks. There is an enormous discrepancy between the obstetrical training of midwifes and general practitioners definitively in favor of the midwife. The midwifes are in principle trained for home confinements but can also not brake away from newer ideas concerning working hours and social security. This results in the fact that the midwifes frequently join a team of obstetricians in a hospital or start working in maternity homes.

IV. Judgement of the obstetrical care system

Judgement of such an obstetrical care system must include, beside the perinatal mortality and the perinatal morbidity, the quality of the selection procedures. The selection of the pregnant women for home or hospital confinements by the midwifes and/or general practitioner will never end up in an one hundred percent result. Acute fetal and maternal complications will always occur, even in patients who showed no abnormalities during prenatal care. The last years a number of data became available about the general quality of the selection procedure.

Breyer and Stolk (2) studied 3724 cases of stillbirths. In 56,7% of all cases a so called medical indication was present for a clinical delivery. Nevertheless in 29% of these cases the delivery took place at home.

The central office for statistics checked for a number of items if the midwife and/or family doctor used the list of medical indications. This study showed that in 1974, 81 primigravida's over 35 years old delivered at home, 281 children below 2000 grams were born at home and even stayed at home. Also 230 multiple pregnancies ended at home as well as 327 breech deliveries.

Especially three studies draw attention the last years. van Alten (1) studied the perinatal data of 3054 children who still were supervised at 28 weeks of amenorrhoea by a midwife or a general practitioner and who were delivered in the maternity home in Wormerveer in the western part of Holland. Advice by an obstetrician during pregnancy was possible in this group of patients. Smits (8) analysed the perinatal data of 2035 children in the area Enschede in the eastern part of the Netherlands. In this study at the 32nd week of amenorrhoea specialistic advice was possible. Lievaart et al. (5) performed a study in the area Eindhoven in 1980 in which perinatal data of home deliveries were compared to hospital deliveries.

In each study over 20% of the cases were secondarily admitted to the hospital. Even during labour 6,3% and 14,3% of the cases were

secondarily admitted to the hospital, and over 60% of the secondarily admitted cases concerned primigravida, whereas of all primigravida 40,5% and 37,7% were secondarily referred to the hospital (1,8). Of all secondarily referred cases 20,7% and 14,3% were admitted during delivery (1,8).
Although perinatal mortality in Holland is decreasing steadily, this decrease is less pronounced compared to countries with comparable socio-economical conditions. Studies in Holland (4) showed also that the perinatal mortality is significant lower in areas with a high number of clinical deliveries compared to areas with a lower number of hospital confinements.
It is always put forward in and outside Holland that the perinatal mortality figures of home confinements with adequate prenatal care are low, 7,5 ‰ in 1968 and 6,5 ‰ in 1970. These numbers exclude however the secondary clinical references of pregnant women and or neonates of whom a physiological delivery was expected but by whom complications occurred. Especially in the secondarily referred group the perinatal mortality is high.
In the studies of van Alten (1) and Smits (8) the perinatal mortality in the secondarily referred group amounts 47,6 ‰ and 59,1 ‰ respectively. In 14 of the sixteen cases who died during pregnancy in the study of Smits the course of pregnancy was disturbed. Of the 18 fetuses who died in the group referred during labour only 4 had an undisturbed medical history and course of pregnancy, which means that these patients should have been referred much earlier (8).
Data concerning perinatal morbidity are for obvious reasons hardly available especially not from home confinements.
Nevertheless some data are present nowadays. The study of Smits (8) showed that perinatal morbidity is almost equal in the primarily planned hospital deliveries and the not primarily planned hospital deliveries. In case of an adequate selection however morbidity should be high in the primarily planned hospital deliveries, low in the physiological group and in between these two groups the figure of the not primarily planned hospital deliveries.
An interesting study was performed by Eskes et al. (3). They compared prospectively umbilical cord blood gas values with matched controls obtained from the hospital population. The median values for pH in the umbilical artery (7.19) and base excess (-9.9 mmol/liter) in home deliveries differed significantly from those of the matched controls (7.25 and - 7.7 respectively) delivered in the hospital. These matched controls however were found in retrospect and they were monitored continuously, sometimes resulting in scalp blood sampling and operative delivery. So the conclusion must be that continuous electronic fetal monitoring in hospital deliveries results in higher umbilical artery pH and lower umbilical artery base deficit compared to home deliveries.
Lievaart et al. (5) studied prospectively two groups of primigravida's : one group delivered by midwifes at home or in the hospital in an out patient service without biochemical or electronical monitoring. The other group were former infertility patients

delivered by the obstetrician in the hospital with all monitoring facilities.
The umbilical artery pH was significantly higher in the second group compared to the first group.
All children were neurologically examined between the 5th and 10th day following birth. It was found that the morbidity in the group delivered by the midwife was higher than the second group.
The authors conclude that in fact the place of birth is not important but the skills, tools and therapeutic possibilities of the person who delivers the baby.

V. Conclusion

The last years some patient groups especially in the United States, Ireland, Scotland, West-Germany promote home confinement strongly. Frequently Holland is used as an example. One of the arguments is always the possible selection in a physiological and a non physiological group. This argument can however never be based on the Dutch results, since such a selection is with the most experience in this respect, far from optimal. This holds especially for primigravida in which in two studies approximately 40 percent was referred secondarily to the hospital (1,8). A second point of worrying are the high figures of perinatal mortality in the secondarily referred group of patients even in a small country like Holland with almost optimal traffic possibilities.
Total hospitalization as such offers also no garantee for optimal obstetrical care. Not every hospital can treat complicated obstetrical and neonatal cases. This means that also between hospitals references of patients must be possible in order to garantee optimal obstetrical care.
The meaning of the umbilical blood gas values in respect to especially the neurological development of the child is not yet completely understood, but certainly needs more research.
What in fact can be learned from Dutch obstetrics is that hospital confinements can be done in an atmosphere which is to some extent comparable to home confinements. The partner of the woman is always present in the delivery room, which is a normal room and not fitted up like an operation theatre. They are wearing their own clothes and the parturient is not draped like a patient to be operated. No drugs must be administered to the patient on a routine base and the woman must be allowed to walk around if medical reasons for bed rest are lacking.
The problem is however that in several countries, unfortunately also in Holland, obstetricians try to take over completely the physiological process of birth, or even try to improve it. After my opinion such an approach will always fail, and moreover will promote the movement for home confinements, which I personally consider as more riskful compared to hospital deliveries.

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